NORTHWOOD

INDUSTRIAL MACHINERY

North
Wood

$2500 00

NW-20 - NW-24 PLANER

NORTHWOOD INDUSTRIAL MACHINERY

11534 COMMONWEALTH DRIVE • LOUISVILLE, KENTUCKY 40299
TELEPHONE (502) 267-5504 • FACSIMILE (502) 267-2332

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Thank you for purchasing a Northwood product. We're proud of the machinery we sell and feel your patronage proves we are offering good machinery at good prices.

Our interest in you does not stop with the sale; we want you to know that we keep a good inventory of the most used parts that may be needed somewhere down the road as you use your Northwood equipment. Less used parts can be obtained in only a few days from the manufacturer. Experience has proven we can furnish over 95% of parts needed immediately, from stock. That's a figure we are proud of.

In addition to our parts inventory we have something even more valuable. We have technicians available for your assistance, and can get you out of a tight spot with a phone call in most instances. Our people will listen when you call with a question or problem. We are interested in helping you when you need us; if we don't have the answer ourselves we'll put you in touch with someone who does.

Most of the threaded fasteners on our equipment have US standard coarse threads; this will include 10-24 screws and bolts in 1/4"-20, 5/16"-18, and 3/8"-16 threads. The one exception will be in the 1/2" size which tend to be 1/2"-12 instead of the more popular 1/2"-13. The heads of these bolts will require metric wrenches, however. If you obtain wrenches in 10mm, 12mm, 14mm, and 19mm you'll be well set up to handle most mechanical work if it ever becomes necessary.

We try to stress safety in all machine operations, but there are two recommendations which are especially important. First, use the guard ! Even if you have to make up one for special operations it is wise to do so. Operating any machine without proper guarding just isn't smart ! REMEMBER: accidents don't always happen to someone else ! Second, keep visitors and spectators out of the way so you don't get distracted.

Again, thanks for buying Northwood equipment. We do appreciate your business and certainly hope you'll keep us in mind as your requirements for additional equipment increase .

UNPACKING AND CLEANING (fig. 1)

Unloading planer, packed in the wooden case should be done by lifting from the bottom of the planer table. Check that a piece of wood is placed on table and then bring table up so the wood is pressed between table and cutterhead. This will prevent table moving up during lifting and damaging table and/or cutterhead. Now you can lift planer using chains or steel cables or strong ropes as shown in figure 1. When using chains or cables use pads to protect finish of planer.

Raising and lowering should be done carefully, ensuring that planer is well balanced. Be especially careful when lowering it so it doesn't bump when it comes in contact with floor.

Anticorrosive oil or grease is applied to the unpainted surfaces of the planer; use kerosene or WD-40 to remove it. Apply a light coat of oil to unpainted surfaces after removing coating.

CAUTION: do not use lacquer thinner for cleaning. It will cause damage to the painted finish and also is exceedingly flammable.

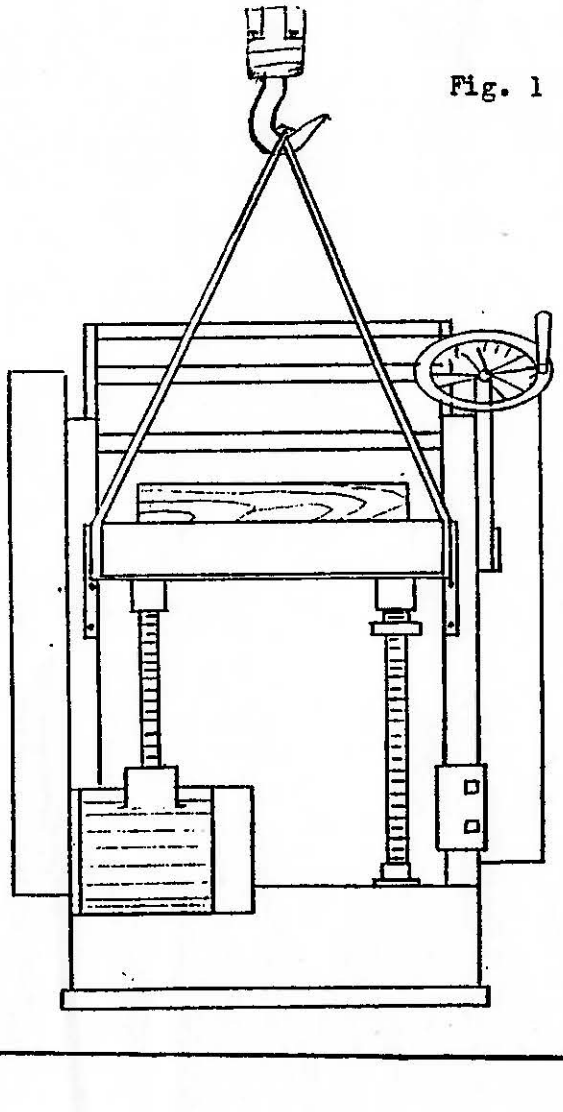

Fig. 1

GENERAL SAFETY PRECAUTIONS

1. Keep guards in place and in working order.
2. Remove adjusting keys & wrenches before turning unit on.
3. Keep work area clear and clean. Clutter invites accidents.
4. Don't use in damp or wet locations.
5. Keep children and visitors out of shop area or at a safe distance.
6. Don't force machine. Let it work at the rate it was designed for.
7. Use correct blade for stock being cut
8. Wear proper apparel and safety glasses or face mask.
9. Don't over-reach, keep right footing and balance, always.
10. Maintain machine in good order.
11. Disconnect from power when servicing or changing blades or cutters.
12. Frequently check for worn or damaged parts. Repair before using.
13. Never go off and leaving machine running unattended.
14. Make certain unit is properly grounded.
15. Re-read operator's manual from time to time.
16. If you haven't operated this machine before ask advice from one who has.
17. Check oil reservoir daily. Make sure unit is using right amount of oil.
18. Remove tie, rings, watch, other jewelry. Keep long hair covered.
19. Always wear eye protection.
20. Use anti-kickback fingers.
21. Stay out of line of cut.
22. Keep your mind on what you are doing.
23. Don't operate machinery after drinking, drugs, or medication.
24. If something seems dangerous DON'T DO IT !

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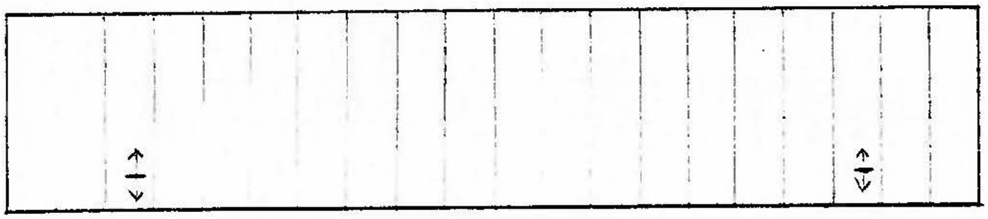
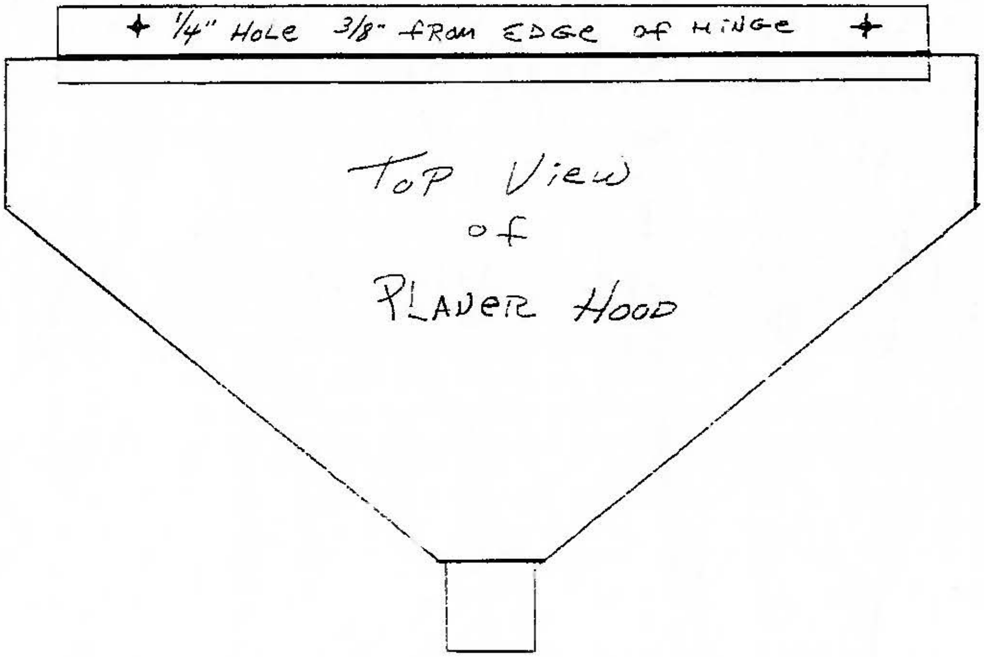
TOP VIEW - CAST IRON CHIPBREAKERS





TO INSTALL HOOD ON NORTHWOOD 20" & 24" PLANERS:

First take hood and hold it in proper position on output side of planer, allowing the fitting for hose to point up slightly above level position (not too much !) and while holding it in this position take pencil and mark hinge so that a hole drilled in hinge will be located in center of cast iron chipbreaker (third one from each end). Having made the marks needed you will now want to drill a 1/4" hole 3/8" in from the edge of hinge on each side as shown in above drawing. Replace hood on planer and mark position of holes on chipbreakers, then drill & tap a #7 hole for 1/4"-20 screw 1/2" long.

Hood is now ready to install using two 1/4"-20 screws.

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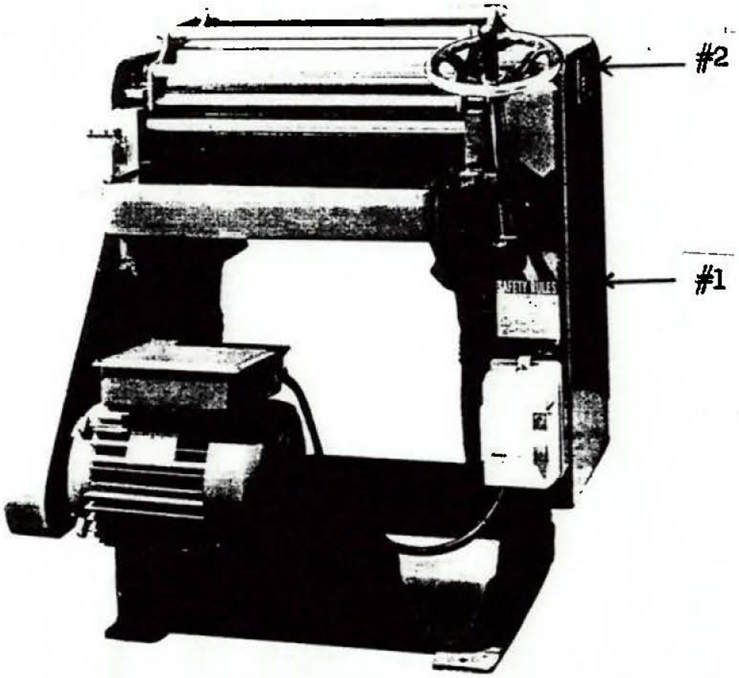
TABLE RAISING AND LOWERING

Be certain that the clamp screw #1 is loosened before raising or lowering table with handwheel #2. Turning handwheel clockwise will raise table 1/16" for each complete turn.

Table should always be brought up to cut. In other words lower table below thickness of stock you wish to surface, then bring table up to come to final size desired. By always coming up to the cut you will eliminate the chance of table movement during cut due to backlash in elevating gears or clearance in elevating screws. This is standard procedure in machine operation and should always be used if optimum results are to be obtained.



PROPER PROCEDURE WHEN PLANING STOCK

For optimum stability in stock being planed it is important to take the same amount off on each side. If you remove substantially uneven amounts instead of trying to remove equal amounts as recommended there is much more likelihood of the dressed stock warping, especially cup warping.

Your Northwood planer is capable of taking substantial cuts up to 1/4" deep; this is valuable when you have a large amount of lumber to dress, but you must keep in mind that you should take off equal amounts and also keep in mind that the final finish cuts must not be more than 1/16" if you want to get optimum surface quality. Keep in mind that wood that has a lot of tension in it, such as curly maple, will benefit from several light cuts instead of a few heavy ones.

HOW TO SHORTEN LIFE OF PLANER AND ENSURE MAXIMUM DOWN TIME

The following practices are guaranteed to greatly reduce the life of your planer if practiced faithfully. Remember, we always have a good stock of planers and will be happy to sell you another at any time. If you will just go along with the practices listed we'll be making the sale sooner than you think.

1. Make certain to blow you shop down with an air hose as often as possible; doing so, especially around your planer will supply the gears and bearings with a generous supply of grit. This will do a great deal to shorten their life and will allow your planer substantial resting time while you wait for new parts.

2. Never lubricate it ! Most effective ! Normal maintenance would be to lubricate all gears and bearings every six months, also the vertical surfaces on which the table moves up and down. Jackscrews and elevating shaft would benefit from an occasional lube, too. By scrupulously avoiding these procedures you will do much to keep your shop supplied with new, up to date machinery. After all, who wants to look at the same old equipment for twenty or thirty years ?

3. Don't waste money by keeping sharp knives at all times. After all, it costs money to have knives sharpened and you could use that money for something else, couldn't you ? By keeping the knives in your planer as long as possible you can accelerate wear on the entire machine, and especially on the cutterhead bearings and feed roller gears. It's always a lot of fun to replace these, and you could mark the occasion by having a big party.

4. Try to keep planer in a damp environment and don't wipe down table after using it or keep it covered with a coat of paste wax, either. Cast iron takes on a lovely brownish red color as it rusts and will add much to the decor of your shop. Goes well with yellow roses or tulips.

5. See if you can wire your planer to a circuit that is too small for the current it requires; this will help to reduce work output and may add to the practice you'll have in changing motors. If you don't have any small circuits you can get the same effect by running planer on a long line from service box. This will help to keep your shop warm in winter because of the extra heat developed by the motor.

IF YOU WISH TO RECEIVE A LONG AND TROUBLE FREE LIFE FROM YOUR PLANER PLEASE DO NOT FOLLOW THE ABOVE PRACTICES. OUR EXPERIENCE HAS SHOWN THEY ARE THE MOST COMMON ONES THAT RESULT IN PREMATURE WEAR AND EARLY FAILURE OF PLANERS

GOOD DAILY PRACTICES TO FOLLOW

Before starting work for the day on your planer do the following:

1. Give it a visual inspection for any obvious problems
2. Grab hold of one end of table and see it it can be moved. If it can you should adjust gibs to remove play; don't overtighten them, though.
3. Double check condition of knives; they should be sharp !
4. Check a few of gib screws to make sure they are tight.
5. Turn on planer and let it run for a few minutes before starting work; listen for any unusual noises that could indicate a problem developing.
6. Check tension of belts from time to time

A FEW FINAL COMMENTS AND HELPFUL HINTS

1. In event planer is overloaded and motor starts to stall it is better to drop table quickly and let motor come back up to speed than it is to cut switch. When a motor is heavily loaded it is drawing much more current than normal and cutting the switch under such circumstances tends to burn the contacts.
2. Most lumber can be surfaced with one heavy and one light pass per side; it is good practice to remove same amount from each side when possible.
3. Don't let inexperienced persons or children operate this planer.
4. Both infeed operator and outfeed operator should stand out of line with planer cutterhead while it is running; this will keep them from being struck in case planer kicks back or throws out a block of wood such as a knot.
5. Keep area around planer off limits to spectators.
6. Inspect each board before planing it for pebbles, nails, and dirt. Doing this will greatly lengthen life of knives.
7. Remember that "tension wood" will require much lighter cuts.
8. Don't expect to plane wet or green wood and get good results.
9. Oily and greasy woods such as teak or red cedar sometimes don't want to feed properly. Wiping down each piece with a rag soaked in lacquer thinner will help. They must be planed immediately after doing this.
10. Protect your health. Anyone operating a planer or near it should wear a dust mask and eye protection. Medical science has now proven that the dust of many woods is carcinogenic.
11. Some woods are TOO DRY to plane properly. Usually these pieces are very old and you can't get chips when you try to plane them, only dust. Such wood is useless, anyway, so don't waste time with such stock.
12. If you MUST plane lumber with a lot of knots be prepared for a lot of damage to your knives. They will start to get minute gaps very quickly on knots.

CHANGING AND ADJUSTING CUTTERHEAD KNIVES

Knives must be sharp and set at proper height if planer is to operate in a satisfactory manner and produce well finished stock.

Every planer is furnished with a knife setting gauge; this should be stored in a safe place and be taken care of. It must never be dropped or used in such a way as to compromise its accuracy. If you will mark the ends so you will always know how to tell one end from the other it will help you to always get the knives set correctly. When setting a knife you should always have the same end of the gauge pointing the same direction for each knife; do not allow yourself to set one knife with the gauge with the end marked right side and set the next knife with the right side mark pointing left. There is always a small difference from one side of the gauge to the other. This is of no consequence as long as you always keep the gauge oriented so each knife is set identically with the others.

Besides the knife setting gauge you will need a 10mm. open end wrench and a small block of wood about 1"X2"X3" to change knives; you'll also need a set of new or re-sharpened knives. NOTE: when purchasing new knives or having dull ones sharpened it is important that the original bevel as on the knives furnished with the planer be ground on the new ones. Many new knives are furnished with a bevel that is too narrow for the Northwood planer, and if these are installed as is the back of the knife away from the cutting edge will drag, or heel, and a very poor cut will result. Also, the noise produced during the cut will immediately tell the operator that something is wrong. When having knives sharpened you must tell the sharpener operator that it is vitally important to reproduce the original bevel.

Perhaps a word of explanation is in order here about the need for the longer bevel as spoken of above. The Northwood planer head is manufactured with a greater angle of attack for the knife position than many planers; it is made so because this greater attack angle, coupled with the unique gib that is used to lock the knife into the head gives a much smoother finish than many other brands of planers, especially in hard to plane lumber where the grain reverses. We have found that only spiral cutterheads can surpass our design, and not by a huge margin even then. When correctly set the cutting edge of the knife is only a few thousandths of an inch higher than the supporting edge of the gib. This is the reason you can virtually make veneer with a Northwood planer.

To change knives we suggest you follow the procedures following. Take your time and be careful and you'll be rewarded with a perfect job. First, take a felt marker and mark each knife slot 1,2, or 3. Use your 10mm wrench and loosen all the gib screws for slot #1. They must be turned in as far as they will go toward the gib. Now lay the wood block against the knife and tap lightly until the knife springs upward. If it sticks you may first have to tap the gib a time or two with the block. When knife springs upward (it is spring loaded from underneath) grasp it and bring it out of the slot. **LEAVE GIB ALONE, DO NOT REMOVE IT.** Take new knife and drop into slot left by old one and back out gib screws until they almost touch wall of cutterhead. What you need to do is take out excess play where the knife fits but not make it so tight you cannot push knife down and have it pushed back up by springs. Now take setting gauge and place it so knife is pushed down by the center boss on each end of gauge. Hold gauge in center and lightly tap down each end to seat the knife, then continue holding it down while you reach through slot in gauge and tighten one gib screw on each end. You can remove gauge now and finish tightening screws. Repeat this operation for slots 2 and 3 and you're done. Before operating planer under power you should turn head by hand to make sure nothing hits anything else; also visually inspect each knife to make sure it looks to be in proper position, not crooked, and double check each gib screw to make sure they are all tight.

OTHER ADJUSTMENTS AND INFORMATION YOU'LL NEED

We carefully set up and adjust every planer before shipment. Test cuts are made and adjustments fine tuned until your new planer cuts perfectly. The best advice we can offer you, therefore is to **LEAVE THINGS ALONE** unless you have strong reason to feel that it is absolutely necessary to change some of the adjustments as they are now set. Most of the time what appears to be a problem shows up immediately after changing cutterhead knives. Difficulty with planing following a knife change indicates you didn't get a good job. At this time you should go back and re-set all three knives. Take your time and do the best job you can. This probably will cure your difficulty. BUT, IF IT DOESN'T you'll find help in the following paragraphs.

PROBLEM: Stock doesn't want to feed or feeds erratically.
Possible causes: low table rollers, chip breakers too low, pressure bar too low, feed rollers out of adjustment, feed roller drive belt (s) loose. You'll need a few metric wrenches (12mm and 14mm), a block of wood 1"X2"X4", and two pennies to make the checks which will follow. First we will check for chip breakers too low. To do this raise chip breakers out of way. Now put a penny on each side of planer frame where the adjustment screws of chipbreakers ride. This is to raise the chipbreakers slightly. Now lower chipbreakers down into their regular position, turn on planer and take a light cut. If it works correctly now then you have determined that the chipbreakers need to be raised. This can be done by raising them and turning each adjusting screw clockwise one full turn, remove pennies, lower chipbreakers again and take another test cut. It may be necessary to turn the screws down a little more to make planer feed right. Keep at it until you get it correct but remember that a total of two turns on each screw should take care of it. Don't overdo it.

Okay, let's say the trouble isn't with the chipbreakers. We'll try the pressure bar next. On the back side of the planer where the chips are ejected you'll see a flat steel plate, resting on a 5/16" hex head screw on each side. This plate is spring loaded and is the method by which the pressure is adjusted. We are going to need to lift this plate up on each end, one end at a time, and place one of the pennies on top of the hex head screw on each end in order to raise the pressure bar. Now make a test cut with planer. It the problem is corrected you can take out the pennies and adjust the screws to correct the problem. Turn them counterclockwise to raise the pressure bar.

Still doesn't feed well ? Darn ! well, let's check the table rollers. To do this you will need to drop the table until you can take the wood block 4" long mentioned earlier and jam it between the upper roller and the table roller. Do this in the approximate center of the table roller and raise table to jam down the table roller firmly. We want to take any slack or looseness out before we adjust the roller setting. On the infeed side of table the table roller should be .010"above the table, and on the outfeed side it should be .005". You can determine this using a straight edge and feeler gauge or use a regular planer gauge with dial indicator. After setting table rollers make another test cut. If planer still doesn't feed correctly after setting table rollers you'll need to take cover off on side of planer opposite motor and check for loose belts. They can be tightened by using a 14mm. socket on an extension and reaching through holes in gears, pulleys to loosen bolts holding adjustment plates to planer frame. Loosen them just enough so you can tighten belts using a wood block and hammer, then retighten them and replace cover. Now check feed. Let's hope it is working correctly now. If it isn't then we must go on and adjust infeed and outfeed rollers. At least you're learning your planer inside and outside and will be an expert mechanic when we finally get done.

To adjust feed rollers you must first make one test cut pass through planer. This will be to provide us with a piece of stock with which we can gauge roller setting. **DO NOT MOVE TABLE UP OR DOWN AFTER MAKING THIS PASS.** Take the test piece and go to outfeed side of planer. Take test piece and see it you can push it back under outfeed rollers, against the way stock would feed out of planer. (unit should not be running during this) If you can then the outfeed roller must be dropped an amount that will not allow test piece to be pushed under it. This must be done an equal amount at each end. Adjusting screws make this easy. Be sure to retighten retaining nuts when you are done. Now go around to infeed side and do the same adjustments. Planer should now feed properly.

Well, we've done everything possible to correct feed faults. Right ? No, not necessarily. It's possible you still didn't quite get one of the adjustments absolutely perfect. If there is still a problem perhaps you should re-check everything you've done to make sure you didn't slip up just a little.

If there remains a difficulty perhaps you should check belt tension from motor to cutterhead. It may need adjustment. And finally, make sure the stock you are trying to feed through planer isn't badly bowed, twisted, or cupped. These conditions can impede proper stock feeding.

PROBLEM: stock is being gouged or "sniped" at beginning and/or end of cut. This is a very common problem with planers and will require checking adjustment of feed rollers, pressure bar, and height of table rollers. Before doing any of these, however, read on a little and see how you answer the following questions:

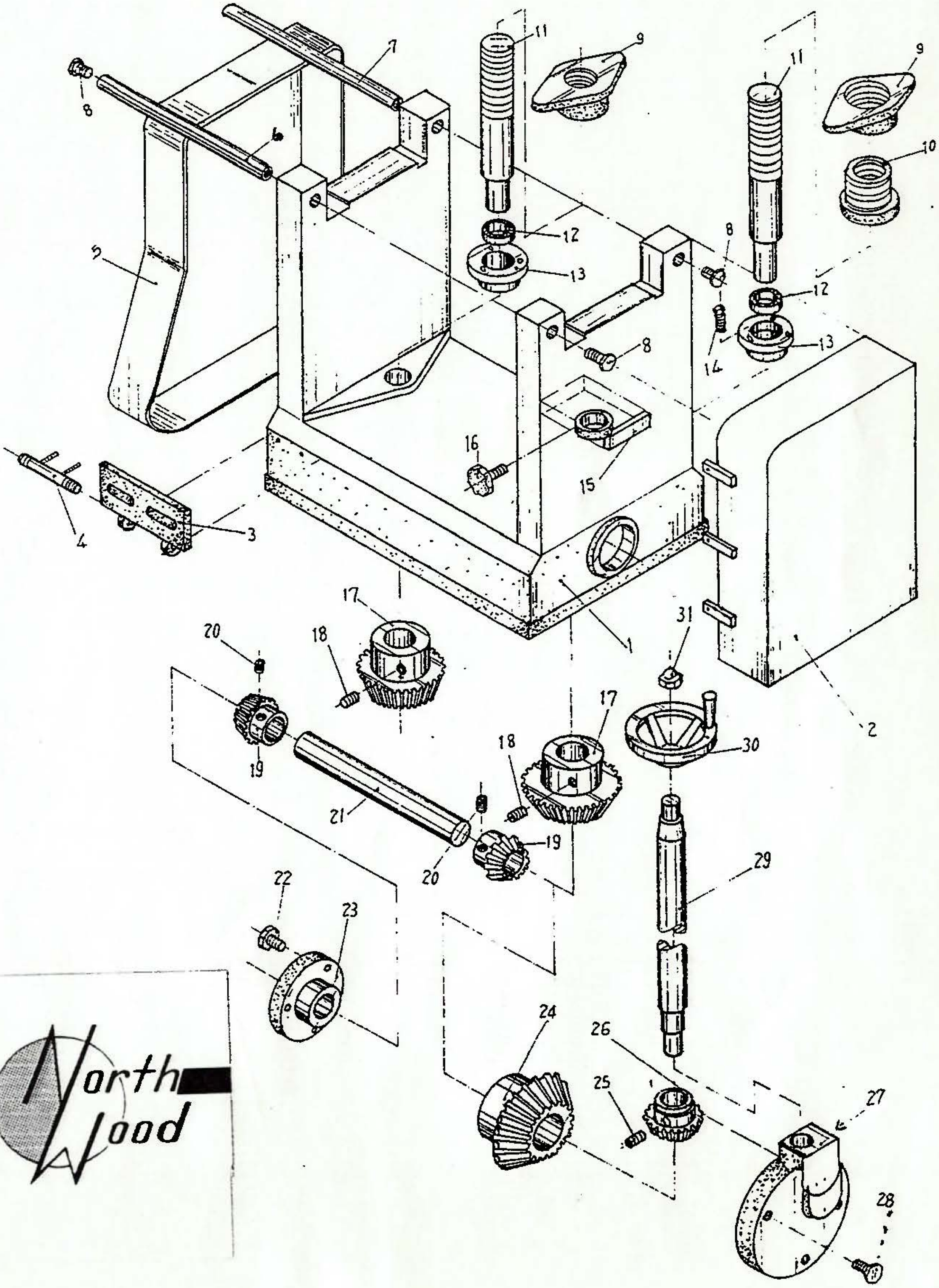
1. Is stock long and heavy ? If it is then operator should support end of it while starting to feed into planer, then support other end of it as it comes out of planer, especially when nearing end of cut. It is quite common for a long board to force the feed rollers and chipbreakers up if it is just started in and then left unsupported. After all, the feed rollers are spring mounted in order that they may adjust to differing stock thickness, and the weight of a long heavy board can be expected to force them up if it isn't supported and kept level with table, and this in turn will result in a snipe. And, since the chipbreakers depend on their weight and a spring action also they can be forced up too, and this would also result in a snipe.

2. Does stock have a cup, warp, bow or twist ? In order to produce perfect results the stock being fed into machine must have a perectly flat bottom surface resting on the table. Quite often a piece must be face jointed on a wide jointer in order to get this perfectly flat bottom. Don't expect your planer to take stock that is in a bad way and make a perfect piece out of it. It simply cannot do it.

3. Are knives dull ? If they are you should get them sharpened before you go ahead with any other procedures or adjustments. Dull knives can be the cause of all kinds of problems and must be eliminated as a possible "root cause" of difficulty before wasting time on other procedures.

4. Is stock being planed dry ? Wood with excess moisture content often will not feed steadily, resulting in snipes, gouges, and ripples. For best results moisture content should not exceed 10%. Incidentally, it is rare for air dried lumber to be this dry, regardless of how long it has been drying. Kiln dried really is best.

FRAME DESCRIPTION



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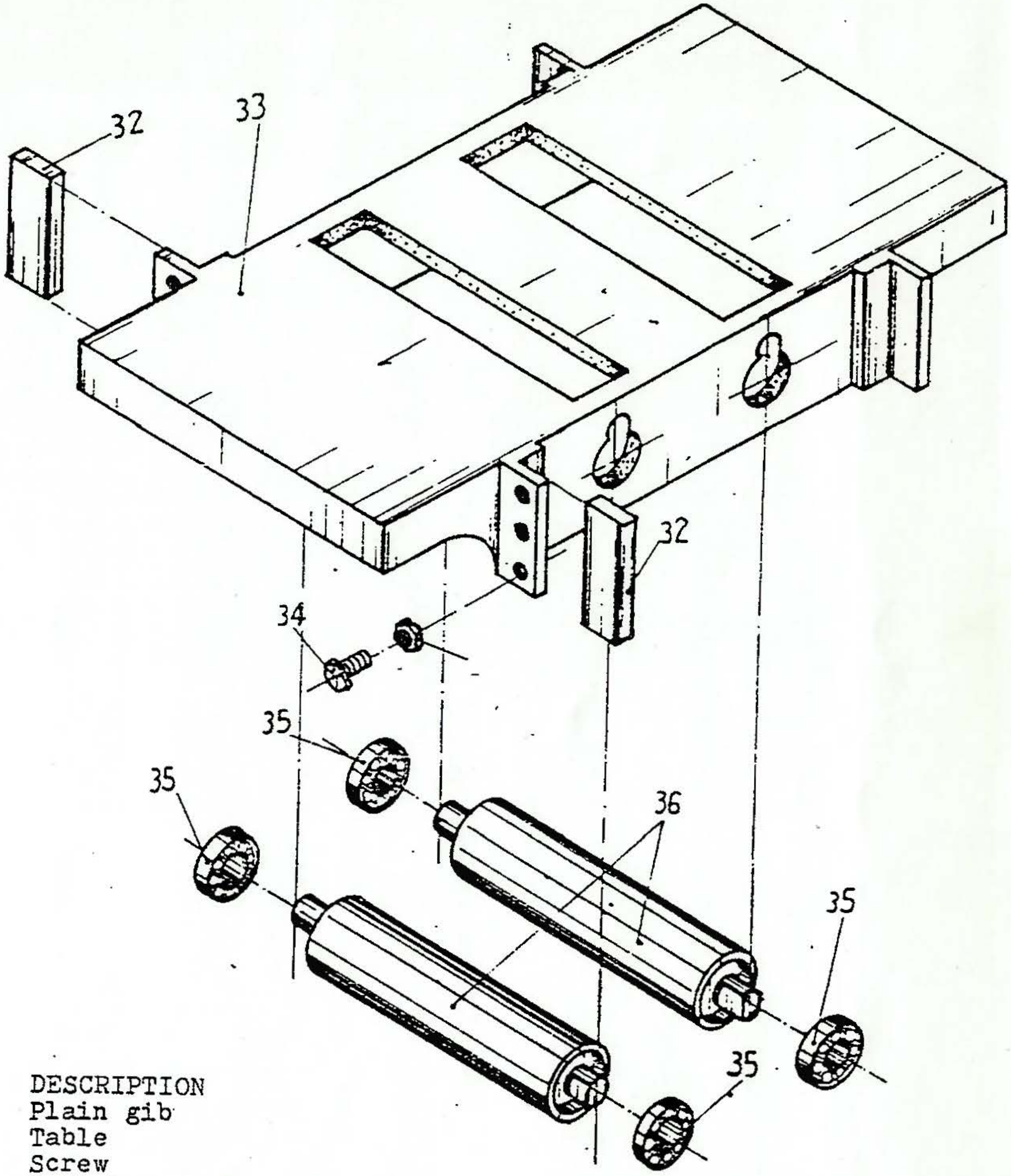

TABLE

REF NO.	DESCRIPTION
32.	Plain gib
33.	Table
34.	Screw
35.	Ball bearing
36.	Table roller

Ref. No.	Description
1.	Base
2.	Feed Transmission Cover
3.	Motor Base
4.	Screw
5.	V-belt Cover
6.	Front Shaft
7.	Rear Shaft
8.	Screw
9.	Elevating Screw Nut
10.	Elevating Screw Adjusting Nut
11.	Elevating Screw
12.	Thrust Bearing 2904
13.	Bearing Housing
14.	Screw
15.	Handwheel Shaft Bracket
16.	Hand Knob
17.	Bevel Gear
18.	Fixing Screw
19.	Bevel Gear
20.	Screw
21.	Gear Shaft
22.	Screw
23.	End Bracket
24.	Bevel Gear
25.	Fixing Screw
26.	Bevel Gear
27.	Bevel Gear Housing
28.	Screw
29.	Handwheel Shaft
30.	Handwheel

CUTTERHEAD & FEED ROLLERS

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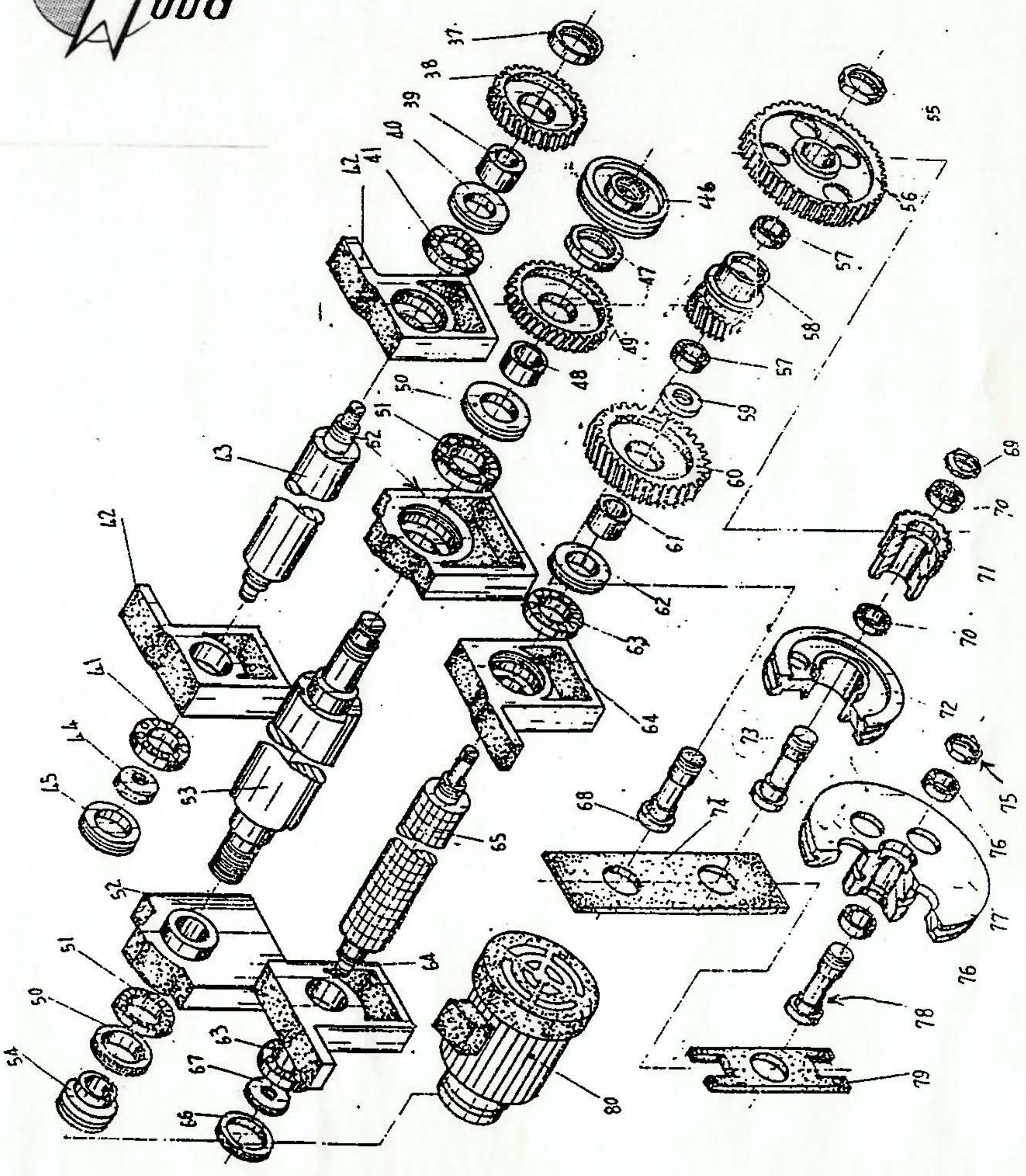
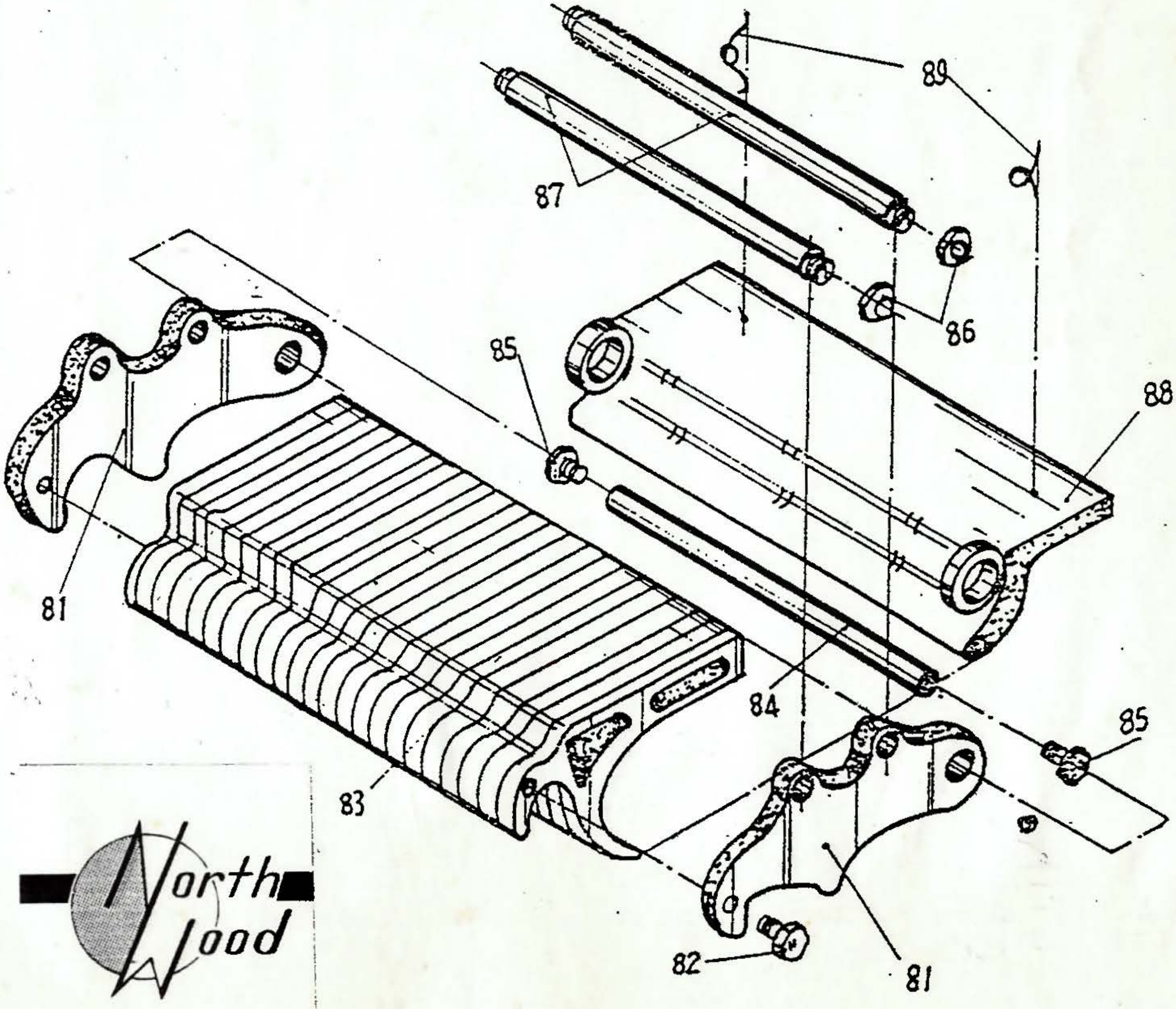


CUTTERHEAD & FEED ROLLERS

Ref. No.	Description
37.	Nut
38.	Helical Gear
39.	Bushing
40.	Bearing Cover
41.	Ball Bearing 6204
42,	Roller Bracket
43.	Outfeed Roller
44.	Nut
45.	Bearing Cover
46.	V-belt Pulley
47.	Nut
48.	Bushing
49.	Helical Gear
50.	Cover
51.	Ball Bearing 6206
52.	Cutterhead Bracket
53.	Cutterhead
54.	V-belt Pulley
55.	Nut
56.	Gear
57.	Ball Bearing 6201
58.	Helical Gear
59.	Nut
60.	Helical Gear
61.	Bushing
62.	Bearing Cover
63.	Ball Bearing
64.	Infeed Roller Bracket
65.	Infeed Roller
66.	Bearing Cover
67.	Nut
68.	Gear Shaft
69.	Nut
70.	Ball Bearing 6201
71.	Gear
72.	V-belt Pulley
73.	Gear Shaft
74.	Gear Shaft Supporting Plate
75.	Nut
76.	Ball Bearing 6202
77.	V-belt Pulley
78.	Pulley Shaft
79.	Belt Tension Plate
80.	Motor

CHIPBREAKERS & PRESSURE PLATE

REF. NO.	DESCRIPTION
81	Bracket
82	Screw
83	Chipbreaker
84	Chipbreakers lifting shaft
85	Screw
86	Nut
87	Stock rest shaft
88	Rear pressure plate
89	Spring



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